6. WHAT IS CLAIMED IS:

1. An optical head wherein:

a first laser light source having a first oscillation wavelength for reading or recording data from a recording medium and a second laser light source having a second oscillation wavelength different from or into the first oscillation wavelength are mounted in a recess formed in a substrate a surface of which has been partially removed;

laser beams emitted from said first and second laser light sources are adapted to be reflected by a mirror constituting a part of said recess and to be outputted in a normal direction of the substrate surface or in a direction away from the substrate surface;

a first photodetector means for obtaining out-of-focus detection signals based on the laser beams which have returned after reflected by a surface of said recording medium, a second photodetector means for obtaining a tracking error detection signal and an information reproduction signal, and a third photodetector means for monitoring the quantity of light emitted from the first or the second laser light source, are provided; and

in said first photodetector means, means for detecting the out-of-focus detection signal based on the laser beam from the first laser light source and means for

detecting the out-of-focus detection signal based on the laser beam from the second laser light source are spaced away from each other.

2. An optical head according to claim 1, which is disposed within an optical information recording/reproducing apparatus in such a manner that the laser beams which have returned after reflected by the surface of the recording medium are each divided and reach an upper surface of said substrate as a first beam for obtaining the out-of-focus detection signal, a second beam for obtaining the tracking error detection signal and an information reproduction signal, and a third beam for monitoring the quantity of light emitted from the first or the second laser light source.

3. An optical head according to claim 1, wherein said recording medium is any one of an optical information recording and reproducing medium, an optical information reproducing medium, a magneto-optic information recording and reproducing medium, a magneto-optic information reproducing medium, an optical information recording and reproducing disc, an optical information reproducing disc, a magneto-optic information recording and reproducing disc, and a

magneto-optic information reproducing disc.

4. An optical information recording/reproducing

apparatus or an optical information reproducing apparatus, having the optical head of claim 1, wherein a laser light source having an oscillation wavelength of 660 nm is used in the case where the recording medium is a DVD medium, while a laser light source having an oscillation wavelength of 780 nm is used in the case where the recording medium is a CD medium.

5. An optical head wherein a first laser light source having a first oscillation wavelength for reading data from a recording medium and a second laser light source having a second oscillation wavelength different from the first oscillation wavelength are mounted in a recess formed partially in a surface of a substrate;

said first and second oscillation wavelengths being each determined in accordance with the type of said recording medium, and said laser light sources are used selectively in accordance with the type of the recording medium and in conformity with a read wavelength;

laser beams emitted from said first and second laser light sources are adapted to be reflected by a mirror constituting a part of said recess and to be outputted in a normal direction of the substrate surface or in a direction away from the substrate surface;

a first photodetector means for obtaining out-of-focus detection signals, a second photodetector means for

obtaining a tracking error detection signal and an information reproduction signal, and a third photodetector means for monitoring the quantity of light emitted from the first or the second laser light source, are provided; and

said first photodetector means having means for detecting the out-of-focus detection signal based on the beam from the first laser light source and means for detecting the out-of-focus detection signal based on the second laser light source.

6. An optical head wherein:

a first laser light source having a first oscillation wavelength for reading data from a recording medium and a second laser light source having a second oscillation wavelength different from the first oscillation wavelength are mounted in a recess formed partially in a surface of a substrate;

laser beams emitted from said first and second laser light sources are adapted to be reflected by a mirror constituting a part of said recess and to be outputted in a normal direction of the substrate surface or in a direction away from the substrate surface;

a first photodetector means for obtaining out-of-focus detection signals, a second photodetector means for obtaining a tracking error detection signal and an information reproduction signal, and a third photodetector

means for monitoring the quantity of light emitted from the first or the second laser light source are formed monolithically on said substrate; and

said first photodetector means has means for detecting the out-of-focus detection signal based on the laser beam from the first laser light source and means for detecting the out-of-focus detection signal based on the laser beam from the second laser light source.

7. An optical head according to claim 6, wherein said first and second laser light sources are disposed adjacent each other so as to permit a single optical path to be used in the optical head.

8. An optical head wherein:

a first laser light source having a first oscillation wavelength for reading data from a recording medium and a second laser light source having a second oscillation wavelength different from the first oscillation wavelength are mounted in a recess formed partially in a surface of a substrate;

said substrate and said first laser light source are optically aligned with each other on the basis of alignment marks affixed to the substrate and the first laser light source, respectively, and said substrate and said second laser light source are aligned with each other optically or by image processing on the basis of alignment marks affixed

to the substrate and the second laser light source, respectively;

laser beams emitted from said first and second laser light sources are adapted to be reflected by a mirror constituting a part of said recess and to be outputted in a normal direction of the substrate surface or in a direction away from the substrate surface;

a first photodetector means for obtaining out-of-focus detection signals, a second photodetector means for obtaining a tracking error detection signal and an information reproduction signal, and a third photodetector means for monitoring the quantity of light emitted from the first or the second laser light source are formed monolithically on the substrate; and

said first photodetector means having means for detecting the out-of-focus detection signal based on the laser beam from the first laser light source and means for detecting the out-of-focus detection signal based on the laser beam from the second laser light source.

9. An optical head according to claim 8, wherein said second and third photodetector means have photodetection sensitivity for the laser beams of the first and second oscillation wavelengths.

10. An optical head wherein:

a first laser light source having a first

oscillation wavelength for reading data from a recording medium and a second laser light source having a second oscillation wavelength different from the first oscillation wavelength are mounted in a recess formed partially in a surface of a substrate;

said first and second oscillation wavelengths being determined in accordance with the type of said recording medium, and said first and second laser light sources being used selectively in accordance with the type of the recording medium and in conformity with a read wavelength;

laser beams emitted from said first and second laser light sources are adapted to be reflected by a mirror constituting a part of said recess and to be outputted in a normal direction of the substrate surface or in a direction away from the substrate surface;

said first or second laser light source and said mirror which extend from a bottom of said recess to the outside of the recess are in a spatial arrangement relation such that a laser beam portion wider than a full width at half maximum in an intensity distribution of the laser beam emitted from the first or the second laser light source is reflected by the mirror.

11. An optical head wherein:

a first laser light source having a first oscillation wavelength and a second laser light source

having a second oscillation wavelength different from the first oscillation wavelength are mounted in a recess formed partially in a surface of a substrate;

laser beams emitted from said first and second laser light sources are adapted to be reflected by a mirror constituting a part of said recess and to be outputted in a normal direction of the substrate surface or in a direction away from the substrate surface; and

said first or the second laser light source and said mirror which extends from a bottom of said recess to the outside of the recess are in a spatial arrangement relation such that most of the laser beam emitted from the first or the second laser beam source is reflected by the mirror.

12. An optical head wherein:

a first laser light source having a first oscillation wavelength and a second laser light source having a second oscillation wavelength different from the first oscillation wavelength are mounted in a recess formed partially in a surface of a substrate;

laser beams emitted said first and second laser light sources are adapted to be reflected by a mirror constituting a part of said recess and to be outputted in a normal direction of the substrate surface or in a direction away from the substrate surface; and

said first or second laser light source and said

mirror which extends from a bottom of said recess to the outside of the recess each have a predetermined width so that a beam portion wider than a full width at half maximum in an intensity distribution of the laser beam emitted from the first or the second laser light source is reflected by the mirror.

13. A method for fabricating an optical head, comprising the steps of:

forming monolithically on a substrate a first photodetector means for obtaining out-of-focus detection signals, a second photodetector means for obtaining a tracking error detection signal and an information reproduction signal, and a third photodetector means for monitoring the quantity of light emitted from a first or a second laser light source;

forming a recess partially in a surface of said substrate, said recess having a slant face which functions as a mirror for reflecting laser beams, and mounting in said recess the first laser light source which has a first oscillation wavelength and the second laser light source which has a second oscillation wavelength different from the first oscillation wavelength; and

forming, as said first photodetector means, means for detecting the out-of-focus detection signal based on the laser beam from said first laser light source and means

for detecting the out-of-focus detection signal based on the laser beam from said second laser light source in such a manner that both said means are spaced away from each other.

14. A method for fabricating an optical head, comprising the steps of:

forming monolithically on a substrate a first photodetector means for obtaining out-of-focus detection signals, a second photodetector means for obtaining a tracking error signal and an information reproduction signal, and a third photodetector means for monitoring the quantity of light emitted from a first or a second laser light source;

forming a recess partially in a surface of said substrate, said recess having a slant face which functions as a mirror for reflecting laser beams, fixing into said recess the first laser light source which has a first oscillation wavelength and the second laser light source which has a second oscillation wavelength different from the first oscillation wavelength in such a manner that laser beams are emitted from the first and second laser light sources at positions different from the fixed side of both said laser light sources to the recess and are reflected by said mirror; and

forming, as said first photodetector means, means

for detecting the out-of-focus detection signal based on the laser beam from the first laser light source and means for detecting the out-of-focus detection signal based on the laser beam from the second laser light source in such a manner that both said means are spaced away from each other.

15. A method for fabricating an optical head, comprising the steps of:

forming monolithically on a substrate a first photodetector means for obtaining out-of-focus detection signals, a second photodetector means for obtaining a tracking error detection signal and an information reproduction signal, and a third photodetector means for monitoring the quantity of light emitted from a first or a second laser light source; and

forming a recess partially in a surface of said substrate, said recess having a slant face which functions as a mirror for reflecting laser beams, and fixing into said recess the first laser light source which has a first oscillation wavelength and the second laser light source which has a second oscillation wavelength different from the first oscillation wavelength in such a manner that laser beams are emitted from the first and second laser light sources at positions different from the fixed side of both said laser light sources to the recess and are reflected by said mirror.

16. A method for fabricating an optical head, comprising the steps of:

mounting a first laser light source having a first oscillation wavelength and a second laser light source having a second oscillation wavelength different from the first oscillation wavelength into a recess formed partially in a surface of a substrate in such a manner that laser beams emitted from the first and second laser light sources are reflected by a mirror constituting a part of said recess and to be outputted in a normal direction of the substrate surface or in a direction away from the substrate surface;

forming monolithically a first photodetector means for obtaining out-of-focus detection signals, a second photodetector means for obtaining a tracking error detection signal and an information reproduction signal, and a third photodetector means for monitoring the quantity of light emitted from the first and second laser light sources; and

forming, as said first photodetector means, means for obtaining the out-of-focus detection signal based on the laser beam from the first laser light source and means for obtaining the out-of-focus detection signal based on the laser beam from the second laser light source in such a manner that both said means are spaced away from each other.

17. A method for fabricating an optical head, comprising the steps of:

mounting a first laser light source having a first oscillation wavelength and a second laser light source having a second oscillation wavelength different from the first oscillation wavelength into a recess formed partially in a surface of a substrate in such a manner that laser beams emitted from said first and second laser light sources are reflected by a mirror constituting a part of said recess and to be outputted in a normal direction of the substrate surface or in a direction away from the substrate surface; and

adjusting a spatial arrangement relation between said first or said second laser light source and said mirror which extends from a bottom of said recess to the outside of the recess in such a manner that a laser beam portion wider than a full width at half maximum in an intensity distribution of the laser beam emitted from the first or the second laser light source is reflected by the mirror.

18. A method for fabricating an optical head, comprising the steps of:

mounting a first laser light source having a first oscillation wavelength and a second laser light source having a second oscillation wavelength different from the

first oscillation wavelength into a recess formed partially in a surface of a substrate in such a manner that laser beams emitted from the first and second laser light sources are reflected by a mirror constituting a part of said recess and to be outputted in a normal direction of the substrate surface or in a direction away from the substrate surface; and

adjusting a spatial arrangement relation between said first or said second laser light source and said mirror which extends from a bottom of said recess to the outside of the recess in such a manner that most of the laser beam emitted from the first or the second laser light source is reflected by the mirror.

19. A method for fabricating an optical head, comprising the steps of:

mounting a first laser light source having a first oscillation wavelength and a second laser light source having a second oscillation wavelength different from the first oscillation wavelength into a recess formed partially in a surface of a substrate in such a manner that laser beams emitted from said first and second laser light sources are reflected by a mirror constituting a part of said recess and to be outputted in a normal direction of the substrate surface or in a direction away from the substrate surface;

forming said first or second laser and said mirror, which extends from a bottom of said recess to the outside of the recess, each at a predetermined width so that a laser beam portion wider than a full width at half maximum in an intensity distribution is reflected by the mirror.

20. An optical head for recording and reproducing information to and from an optical disc corresponding to an oscillation wavelength of a semiconductor laser, comprising a light source module, a beam splitter, and an objective lens, along a single optical path, said light source module comprising a plurality of semiconductor lasers and mounted on a semiconductor substrate with photodetectors for automatic focus detection and tracking detection formed thereon monolithically, said semiconductor lasers being different in wavelength in association with the optical disc.

21. An optical head for recording and reproducing information to and from an optical disc, said optical disc carrying an integration module, said integration module comprising a plurality of semiconductor lasers of different wavelengths and a semiconductor substrate with photodetectors for automatic focus detection and tracking detection formed thereon monolithically, said photodetectors having sensitivity at the corresponding wavelengths, wherein an alignment mark is affixed to one or

both of said semiconductor lasers and said semiconductor substrate.

22. An optical head for recording and reproducing information to and from an optical disc, said optical head carrying an integration module, said integration module comprising a plurality of semiconductor lasers of different wavelengths and a semiconductor substrate with photodetectors for automatic focus detection and tracking detection formed thereon monolithically, said photodetectors having sensitivity at the corresponding wavelengths, wherein a tilted mirror is formed in said semiconductor substrate, and an alignment mark is affixed to one or both of said semiconductor lasers and said semiconductor substrate.

23. An optical head for recording and reproducing information to and from an optical disc, said optical head carrying an integration module, said integration module comprising a plurality of semiconductor lasers of different wavelengths and a semiconductor substrate with photodetectors for automatic focus detection and tracking detection formed thereon monolithically, said photodetectors having sensitivity at the corresponding wavelengths, wherein a tilted mirror is formed in said semiconductor substrate so as to have a width which reflects a laser beam portion wider than a full width at

half maximum in an intensity distribution of the laser beam emitted from any of the semiconductor lasers, and an alignment mark is affixed to one or both said semiconductor lasers and said semiconductor substrate.

24. An optical head for recording and reproducing information to and from an optical disc, said optical head carrying an integration module, said integration module comprising a plurality of semiconductor lasers of different wavelengths and a semiconductor substrate with photodetectors for automatic focus detection and tracking detection formed thereon monolithically, said photodetectors having sensitivity at the corrersponding wavelengths, wherein an amplifier for amplifying light currents from said photosensors is formed monolithically on said semiconductor substrate, a tilted mirror is formed in the semiconductor substrate, and an alignment mark is affixed to one or both of said semiconductor substrate or said semiconductor lasers.

25. An optical head for recording and reproducing information to and from an optical disc, said optical head carrying an integration module, said integration module comprising a plurality of semiconductor lasers of different wavelengths, photodetectors for automatic focus detection and tracking detection, and a semiconductor substrate, wherein the photodetectors and a light current amplifier

are formed monolithically on said semiconductor substrate, a tilted mirror is formed in the semiconductor substrate, alignment marks are affixed to said semiconductor lasers and said semiconductor substrate at respective contacting surfaces, and alignment is made by image processing with use of a transmitted or reflected light of infrared light.

26. An optical head for recording and reproducing information to and from an optical disc, said optical head carrying an integration module, said integration module comprising a plurality of semiconductor lasers of different wavelengths, photodetectors for automatic focus detection and tracking detection, and a semiconductor substrate, wherein the photodetectors are formed monolithically on said semiconductor substrate and a tilted mirror is formed in the substrate, alignment marks are affixed to both said semiconductor lasers and said semiconductor substrate, and a material superior in thermal conductivity is disposed in a contact portion between the semiconductor lasers and the semiconductor substrate.

27. An optical head for recording and reproducing information to and from an optical disc, said optical head carrying an integration module, said integration module comprising a plurality of semiconductor lasers of different wavelengths, photodetectors for automatic focus detection and tracking detection, and a semiconductor substrate,

wherein the photodetectors are formed monolithically on said semiconductor substrate and a tilted mirror is formed in the substrate, alignment marks are affixed to both said semiconductor lasers and said semiconductor substrate, and a material having a stress relaxing effect is disposed in a contact portion between the semiconductor lasers and the semiconductor substrate.